

MULTIMEDIA



UNIVERSITY ®

STUDENT ID NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016/2017

PCA0016 – COMPUTER APPLICATIONS AND PROGRAMMING (Foundation in Engineering)

13 OCTOBER 2016
9:00 am – 11:00 am
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **EIGHT** pages (excluding the cover page) with **THREE** Sections only.
2. Answer **ALL** questions in **Section A**, **B** and **C**.
3. Please mark the answers for **Section A** and **Section B** on the **OMR form** provided.
4. Please write the answers for **Section C** in the **Answer Booklet** provided.

SECTION A: MULTIPLE CHOICE [25 MARKS]

Instructions: Answer **ALL** questions in this section. Shade your answers on the **OMR** sheet.

1. Both _____ and _____ must work together for the _____ to perform a task.
 - A. processor, control unit, arithmetic logic unit
 - B. control unit, processor, arithmetic logic unit
 - C. control unit, arithmetic logic unit, processor
 - D. control unit, processor, motherboard
2. _____ is an instruction which order a _____ to perform a specific process.
 - A. Command, program
 - B. Program, command
 - C. Data, program
 - D. Program, data
3. Which of the following criteria determine the quality of an LCD monitor?
 - A. Respond time
 - B. Bit depth
 - C. Color depth
 - D. Pixel
4. In order to improve the access time of a hard disk, frequently used data are usually stored in _____.
 - A. platter
 - B. buffer
 - C. cluster
 - D. disk controller
5. With _____ technology, users are able to create labels directly on the disk.
 - A. Light Scribe
 - B. Light Saber
 - C. Enhanced Integrated Drive Electronics (EIDE)
 - D. Small Computer System Interface (SCSI)
6. “*The operating system regains control if one program stops operating properly.*”

Which of the following best describes the above statement?

 - A. Multiprocessing
 - B. Preemptive multitasking
 - C. Fault-tolerant computer
 - D. Cooperative multitasking

Continued...

7. A _____ operating system allow users to retain existing application software and data files with different computer models.
- A. device dependent
 - B. proprietary software
 - C. device independent
 - D. embedded
8. _____ is a software that can be re-modified and redistributed without any restriction from the copyright holder.
- A. Public domain software
 - B. Freeware
 - C. Shareware
 - D. Open source software
9. _____ provides interface between the _____, computer hardware and _____.
- A. User, application software, system software
 - B. Application software, user, system software
 - C. System software, utility program, application software
 - D. System software, user, application software
10. The miniature graphical representation of an application is called _____.
- A. Graphical User Interface (GUI)
 - B. image
 - C. picture
 - D. icon
11. _____ is a phenomena that may leads to different systems sometimes evolve toward performing similar functionality and features.
- A. Technology convergence
 - B. Digital convergence
 - C. Media convergence
 - D. Network convergence
12. _____ provides control access to resources on a network.
- A. Mainframes
 - B. Supercomputer
 - C. Terminal
 - D. Server
13. Which of the following is NOT an element of an information system?
- | | |
|--------------------|--------------|
| I Operating system | III Software |
| II Data | IV Network |
- A. I & II
 - B. II & III
 - C. II & IV
 - D. I & IV

Continued...

14. Instructions in _____ control structure are executed one after another.
A. Sequential
B. Decision
C. Iteration
D. Loop
15. The only language that the computer recognizes directly is _____ language.
A. assembly
B. machine
C. procedural
D. object oriented programming
16. A _____ translates the entire program as an input, conversely, _____ translates one statement at a time.
A. assembler, compiler
B. compiler, interpreter
C. interpreter, assembler
D. compiler, assembler
17. With _____ language, users and programmers are able to access data in a database.
A. machine
B. assembly
C. procedural
D. nonprocedural
18. When a(n) _____ is passed to a(n) _____, it is called a(n) _____.
A. variable, argument, procedure
B. argument, variable, procedure
C. variable, procedure, argument
D. argument, procedure, variable
19. Users are able to share documents via online meetings and communicate with other connected users through _____.
A. collaboration software
B. groupware
C. mashup
D. web services
20. A(n) _____ allows part of an organization's _____ accessible outside the company.
A. internet, intranet
B. extranet, internet
C. internet, extranet
D. extranet, intranet

Continued...

21. The standard that outlines characteristics of how two network devices communicate is called _____.
A. network standard
B. protocol
C. token ring
D. ethernet
22. • less susceptible to noise or interference
 • faster data transmission
 • better security for signal during transmission
The features listed above best describe which of the following transmission media?
A. Coaxial cable
B. Twisted pair cable
C. Fiber optic cable
D. Ethernet crossover cable
23. A long distance telephone line that carry multiple signals over a single communication line is called _____.
A. ISDN line
B. dial up line
C. dedicated line
D. T-carrier line
24. Which of the following network standard requires line-of-sight transmission?
A. Bluetooth
B. Infrared Data Association (IrDA)
C. Ultra wideband (UWB)
D. Wireless network
25. Scaling the _____ graphics reveals the pixels, while scaling the _____ graphics preserves the shapes.
A. vector, bitmap
B. bitmap, vector
C. raster, bitmap
D. bitmap, raster

Continued...

SECTION B: TRUE OR FALSE [15 MARKS]

Instructions: Shade your answers on the OMR form provided. Shade **A** for **True** and **B** for **False**.

26. System software is a set of programs that coordinate all the activities among computer hardware devices.
27. Embedded computers are small in size with limited hardware mounted on the board.
28. Portal is a collaborative website that allows user to alter its content via their web browser.
29. The executing operation in a machine cycle involves the process of translating instruction into signal for the computer to execute.
30. RFID (Radio Frequency Identification) reader uses laser beams to reads information on the tag.
31. Nonimpact printer creates images spraying tiny drops of liquids onto a piece of paper.
32. EIDE (Enhanced Integrated Drive Electronics) is a hard disk interface that uses serial signals to transfer data, instructions and information.
33. Track is the smallest unit of disk space that stores data and information.
34. Volatile memory losses its content when a computer's power is turned off.
35. GUI (Graphical User Interface) allows users to issue commands through visual images.
36. All nodes on a bus network are connected to each other through a hub.
37. Wires in a twisted pair cable are twisted together to reduce noise.
38. A do-while control structure allows a program to continuously perform the same action as long as a certain condition is met.
39. A hierarchy chart contains only rectangles and lines.
40. Third generation language (3GL) is a procedural language while fourth generation language (4GL) is a nonprocedural language.

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SECTION C: SHORT ANSWER [60 MARKS]

Instructions: Answer **ALL** questions in this section. Write your answers in the Answer Booklet.

QUESTION 1 [20 marks]

- a. Briefly explain FOUR (4) functions of an operating system installed on computers.

[4 marks]

- b. What is the purpose of the following utility software?

i. Disc burning software

[1 mark]

ii. Disk defragmenter

[1 mark]

- c. Match the term on the left with its corresponding explanation of the right.

[6 marks]

TERMS	EXPLANATION
1. Fault-tolerant computer	A. An operating system that uses command-line interface
2. DOS	B. The technique of swapping items between memory and storage
3. Multitasking	C. A process that an operating system sends printed documents to a buffer instead of to the printer
4. Paging	D. The process of starting or restarting a computer
5. Spooling	E. Computers that have duplicate components such as processors, memory, and disk drives
6. Booting	F. Computers that runs multiple programs concurrently

- d. The processor in a computer contains two main components that work together to perform processing operations. Name the TWO (2) main components and describe their main tasks.

[4 marks]

- e. Cathode ray tube (CRT) monitors are being replaced with flat screen monitors. List down FOUR (4) advantages on using the flat screen monitors over CRT monitors.

[4 marks]

Continued...

QUESTION 2 [20 marks]

- a. Application software is available in a variety of forms. Briefly explain and provides an example for the following form of application software.
- i. Packaged software [2 marks]
 - ii. Open source software [2 marks]
 - iii. Freeware [2 marks]
- b. Computer communication is a process in which two or more computers or devices transfer data, instructions and information. What are the three components that are needed for communication to take place? [3 marks]
- c. What are the three advantages of using a computer network? [3 marks]
- d. Cables are physical transmission media used for communication. What are the three types of cables used in communication? Of these three cables, which one is used to connect a computer to the nearest hub or switch? [4 marks]
- e. Compression is used to store data by making the file size small to save space on storage devices. Briefly explain the two types of compression techniques and how they work. [4 marks]

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QUESTION 3 [20 marks]

- a. Briefly explain the algorithmic and heuristic problem solving techniques. [2 marks]

- b. Given the following code segment in Visual Basic, write an equivalent code by using the *select case* statements. [8 marks]

```
if txtMarks.text < 15 Then
    lblResult.text = "Poor"
elseif txtMarks.text >=15 AND txtMarks.text <= 35 Then
    lblResult.text = "Good"
else
    lblResult.text = "Excellent"
End If
```

- c. The form shown in Figure 1 calculates the total ticket price to enter an amusement park. Write a program segment in Visual Basic for the form. Use the following control names that correspond to the controls used on the form, *txtAdult*, *txtChildren*, *txtAdultPrice*, *txtChildrenPrice* and *txtTotal*. There is an additional 6% GST charge added to the total price. The code segment is to be attached to the *Calculate* button.

[10 marks]

Figure 1